


S Y L L A B U S

O F A

COURSE OF LECTURES,

&c. &c. &c.



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SYLLABUS

Robert OF A *Little*
Sir *Liberal*

COURSE OF LECTURES,

Human & Domestic

READ AT

1742

GUY'S HOSPITAL,

BY

WM. BABINGTON.

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S Y L L A B U S
O F
C H E M I S T R Y.

GENERAL DOCTRINES.

DEFINITION of Chemistry.

Distinction between this and other Branches
of Natural Philosophy.

Matter, the Object of Philosophy in general.

General Properties of Matter : *Extension ;*
Impenetrability ; Divisibility.

States of Matter : *Rest ; Motion.*

Motion, either *communicated*, or *excited*.

Excited Motion : *Repulsion ; Attraction.*

Of Attraction.

Attraction of different Kinds : *Magnetic, Electric, Capillary Attraction ; Attraction of Gravitation, of Cohesion ; Chemical Attraction.*

Of Gravitation.

Gravity, either *Absolute*, or *Relative*.

Modes of ascertaining the Relative or Specific Gravity of Bodies.

Of Cohesion.

It's various Degrees : *Hardness ; Softness ; Fluidity ; Vapor ; Air.*

It's various Modes : *Brittleness ; Ductility ; Malleability ; Crystallizability.*

Of Chemical Attraction.

Distinction between this and other Attractions.

Necessary Conditions in the Bodies upon which it operates.

Effects

Effects produced by it : *Change of Temperature* ; of *Specific Gravity* ; of *Taste* ; of *Smell* ; &c.

Division into *Single* and *Double Elective Attractions*.

Construction of *Tables* of *Elective Attractions*.

Apparent Objections to these.

EXPLANATION OF GENERAL TERMS.

Analysis ; Synthesis : *Via Sicca* ; *Via Humida*.

Solution : *Menstruum* ; *Solvent*.

Precipitation : *Precipitate* ; *Precipitant*. &c.

OF CHEMICAL APPARATUS.

Choice of Materials.

Forms : *Furnaces* ; *Baths* ; *Retorts* ; *Receivers* ; *Matrasses* ; *Muffles* ; *Cupels* ; *Crucibles* ; *Lutes* ; &c.



OBJECTS OF CHEMISTRY.

NATURE of Chemical Objects.

Division into Heat, Gasses, Water, Salts,
Earths, Metals, Inflammables.

OF HEAT.

Definition. *Boiling heat 212 degrees. freezing point 32 degrees*

Opinions regarding its Nature.

Laws of it's Transmiffion in Solids and

Fluids. *Water may be made red hot by being compressed in its vessels, so that some*

Capacities of Bodies for conducting and retaining Heat. *Some bodies will retain heat more than others*

General Effects of Heat; Expansion, Liquefaction, Evaporation, Ignition, Combustion.

Of Expansion.

Illustrations in Solids, Liquids, Airs.

Apparent Exceptions. *Iron expands by being heated so does other bodies*

Expansion of certain Bodies proportioned to the Heat applied: Thermometers.

Mercurial Spirit, Vini Aq. Vini are what is commonly used in the construction of thermometers. Alcohol Vini is the most proper for this purpose.

in the Construction of the instrument, it must be
perfect hollow tube like the degree of heat in
Cold will not be accurately ascertained, this may
be known by putting quickly into the tube measure
the spirit and taking up by this method when made
to ascertain with the greatest accuracy ---
Of Liquefaction.

Dependence of Liquefaction upon the De-
gree of Heat. Some bodies will liquify sooner

Manner in which it takes place in Bodies: to be liq.

Melting Point; Fusion; Vitrification. as Gold

Manner in which it ceases: Freezing Point; 32 deg.

Congelation; Coagulation. { water mixed with ly. will
freeze sooner than ly.

Theory of LATENT HEAT. { Solution of Ice with ly. will raise the

of Ice when in contact with ly. { ly. will raise the
It will lower the thermometer thermometer

below the freezing point. { of water is mixed with ly. it will lower the
of the thermometer. { of water is applied it will freeze the thermometer.

Its dependence on external Pressure, as of Cold

well as on Heat: Vaporific Point; Fixity;

Volatility. The force of steam is greater than

Elasticity of Vapor: Steam Engines. compressed blood

Evaporation productive of Cold. in a vessel it will

Condensation of Vapor a Source of Heat. strong

Application of Evaporation to Distillation,

Sublimation, &c. Spontaneous evaporation

Of Spontaneous Evaporation. heat applied, it

Evaporates by the atmospheric air having grasp
to it. { Evaporation has not an influence even on

subject. Fog is Of Ignition. { Ignition is the heat
of the colder atmosphere the more fog is produced
atmosphere is contained in the atmosphere with a large

Distinction from Combustion and Phos-

phorescence. is the making of many things
luminous without undergoing any

Different Changes
as Gold Glass or by applying heat to a certain

degree. Some bodies are luminous without
applying heat as the glow worm the

in Capable of being ignited. Phos. Mine does not by
being ignited, owing to their Volatility. Heat is of diff
as Red white Rose Colours Black &c

(6)

Different Degrees of Ignition ; Red Heat,
White Heat, &c.

Susceptibility of different Bodies to be
ignited.

Combustion of bodies always alters them in their
qualities very materially, as if Sulphur is burnt it
quite altered with. **Of Combustion.** properties being
burnt like wood is Capable of being mixed with
Sulphur. One happens unless there is Atmospheric
Nature of this illustrated.

It's limitation to particular Bodies : Inflam-
mables.

Effects of Combustion on Inflammable
Bodies.

on the Air in
it, but unless Atmospheric Air is adm
does not which it takes place. become inflammable, the

Different Theories of Combustion. Contain differ
is now said that nothing contains inflammability
from dephlogistic Air alone. If Sulphur is b
will produce

OF THE SOURCES OF HEAT. More Nitric
and than its own weight before burnt. If w
Lead

Enumeration : Life ; Fermentation ; Con-
densation ; Chemical Combination ; Friction ;

Combustion ; Electricity ; Solar Rays. Friction will
produce an intense degree of heat so as to set fire
the surrounding apparatus. Electric Sparks are ve
of heat so as to reduce bodies to different states
the Electric fluid falls upon iron it will make
hot. Solar Rays may be brought to one point
the heat will be while entirely away.

Application of these to Chemical Purposes.
duce an intense degree of heat so as to set fire
the surrounding apparatus. Electric Sparks are ve
of heat so as to reduce bodies to different states
the Electric fluid falls upon iron it will make
hot. Solar Rays may be brought to one point
the heat will be while entirely away.

Of
agnesia it is found to have the least aff
of any substance. Glass is easily reduced to
by the heat of Solar Rays.

gas or air. This is found in the atmosphere, & is a common kind of elastic form part of the atmosphere. There are many of them invisible, & we don't mean to say produced by heat or light as they are not luminous. These gases are of various kinds, some of them capable of supporting life, some are saline. Some of them will not support life, unless there is combined with it pure and dephlogostic air. No body can live in Acid & Alkaline, as is found in Caverns & we have seen that it flows from upon it Vitriolic & even it over some time, then it is changed into any other kind of gas.

OF GASSES.

History of their Discovery.

Their Sources. It is if it remains in a few minutes.

Distinguishing Properties: Rarity; Invisibilty; Permanent Elasticity.

Disposition to unite with Water.

----- with other Substances.

----- with each other.

Theory of their Composition.

Division into Respirable, and Mephitic.

OF RESPIRABLE GAS.

Distinguishing Properties of this Order.

Example; Pure Air.

Of Pure Air.

It's Discovery.

Sources.

Preparation.

Sensible Properties.

Effects upon Animal Life.

Effects

other Gaseous Substances & the Iron that is used will weigh more after fusion than it did before. Nitrous Gas (or Gas) is capable of dissolving the Union of different Gases and giving them a common property will take place from and seems to be composed of dephlogisticated Air.

Effects upon Combustible Bodies: Water;

Nitrous Acid.

Absorption by Water.

———— by other Bodies.

Mixture with other Gasses: Eudiometer;

Nitrous Acid.

Theory of it's Composition.

Elective Attractions.

Uses.

OF MEPHITIC GASSES.

Their distinguishing Properties.

Division into *Simply Mephitic, Saline, Inflammable.*

OF GASSES SIMPLY MEPHITIC.

Their distinguishing Properties.

Enumeration; *Phlogisticated Air, Nitrous Air.*

Of Phlogisticated Air.

It's Sources.

Preparation, and Purification.

Sensible

Sensible Properties.

Effects upon Animal Life, and Flame.

Disposition to unite with Water.

Effects of Vegetation upon it.

----- of the Electric Spark with pure
Air: *Nitrous Acid*.

Mixture with other Gasses.

Theory of it's Composition.

Nitrous Air. *Of Nitrous Air.*
 This Gas is invisible, but it comes into
 Its Preparation and Purification.
 Sensible Properties. *with Nitro-sphuric acid*
 Effects upon Animal Life, Vegetation, and
 Combustion. *Gravity. The colour of*
 of various Fluids upon it: Phlo-
 gisticated Nitrous Acid; &c. *Nitrous*
 of Exposure to Liver of Sulphur:
 Dephlogisticated Nitrous Air.
 of the Electric Spark.

— of the Electric Spark.

----- of this Air upon putrefying Substances.

----- of Exposure to heated Charcoal,
Pyrophorus, or Vitriolated Iron.

Mixture with other Gasses.

Theory of it's Composition.

Uses.

OF SALINE GASSES.

Their distinguishing Properties.

Enumeration; *Vitriolic Acid Air*, *Marine Acid Air*, *Dephlogisticated Marine Acid Air*, *Spathic Acid Air*, *Aërial Acid*, *Prussian Acid Air*, *Volatile Alkaline Air*.

N. B. These considered under simple Salts.

OF INFLAMMABLE GASSES.

Their distinguishing Properties.

Enumeration; *Common Inflammable Air*, *Hepatic Air*, *Phosphoric Air*.

Of Common Inflammable Air.

It's Sources.

Preparation and Purification.

Sensible Properties.

Effects upon Animal Life, and Vegetation.

Result of it's Combustion: *Water*; *Nitrous Acid*.

Effects of various Fluids upon it.

Other contains a quantity of inflammable Air

(11)

Combination with Phlogisticated Air : Volatile Alkali.

Effects upon Metallic Calces.

Theory of it's Composition.

Uses : Aërostation ; Fire-works.

Is obtained from the Liver of Sulphur by means of Acid : This Mixture is composed of alkaline salt with common Sulphur, in the effluvia of acid a large quantity of Hepatic Gas is generated.

Of Hepatic Air.
It's Preparation. It is prepared by heating a mixture of Sulphur and water in a retort.

Purification. The gas is purified by passing it through a solution of Potash.

Sensible Properties. It has a strong, acrid, and offensive smell, and is highly inflammable.

Effects of Exposure on it. It is highly dangerous to breathe it, and causes inflammation of the lungs.

Result of it's Combustion. It burns with a blue flame, and produces Sulphuric Acid.

Union with Water : Hepatic Waters. It dissolves in water, and forms a solution called Hepatic Water.

Decomposition by Nitrous Acid. It is decomposed by Nitrous Acid, and produces Nitric Acid.

By Metals. It is decomposed by many metals, and produces various salts.

It's Effects upon Metallic Calces, and their Solutions. It acts upon metallic calces, and dissolves them.

Theory of its Composition. It is composed of Sulphur and Hydrogen.

Uses. It is used in the arts, and in medicine.

Of Phosphoric Air.

It's Discovery. It was discovered by Lavoisier and Berthollet.

Preparation. It is prepared by heating Phosphorus in a retort.

Properties. It is a colorless, odorless gas, and is highly inflammable.

Effects. It is highly dangerous to breathe it, and causes inflammation of the lungs.

It is decomposed by Nitrous Acid, and produces Nitric Acid.

By Metals. It is decomposed by many metals, and produces various salts.

It's Effects upon Metallic Calces, and their Solutions. It acts upon metallic calces, and dissolves them.

Effects of Exposure on it: *Spontaneous Inflammation.*

Theory of it's Composition.

OF WATER.

Definition.

Properties in it's State of Vapor.

———— in it's Fluid State.

———— in it's Solid State.

Theory of it's Composition.

Attractions.

Uses.

OF SALTS.

Distinguishing Properties of SALINE BODIES: *Sapidity; Solubility; Incombustibility.*

Effects of Exposure: *Deliquescence; Efflorescence; &c.*

Effects of Solution in Water: *Change of Temperature; Saturation.*

Means of promoting the Crystallization of Salts: *Cooling; Evaporation; Sublimation; Precipitation.*

Effects

Effects of Heat upon them : *True and Watery Fusion ; Decrepitation ; Decomposition.*

----- of Saline Substances on each other.

----- on Gasses.

----- on Earths.

----- on Metals.

----- on Inflammables.

Division of Saline Bodies into *Simple and Compound.*

Then combine OF SIMPLE SALTS. *See Part 2.*
Especially the Acids. Acids turn Vegetables
 Their distinguishing Properties. *Red & Alkaline*
 Division into *Acids and Alkalies. Vegetables turn*
to Green. In the case of acids & alkalis
 OF ACIDS. *Acids are used in dyeing. Alkalies*
 Their distinguishing Properties. *No 3.*
 Theory of Acidity. *Differ much in their properties*
 Division of Acids into *Mineral, Vegetable, & Animal.*
Each other. All acids have one principle
 OF Mineral ACIDS. *See Part 2.*
 Their distinguishing Properties.

Enume-

is now prepared from a mixture of Sulphur
and Common Nitre being burnt together which
produces H. Vitriol. The Chamber that it is made
in is lined with lead. 14 After this it is redistilled
several times. The proportions are of great consequence
Enumeration: Acid of Vitriol, Phlogisticated
Acid of Vitriol, Acid of Nitre, Phlogisti-
cated Acid of Nitre, Acid of common Salt,
Dephlogisticated Acid of common Salt, Acid
of Arsenic, of Borax, of Fluor, of Mo-
lybdena, of Amber, of Tungsten, and the
Aerial Acid. Can be brought nearly to double the
gravity of common Aqua.
Of Acid of Vitriol. readily combines
with moisture by mixing large quantity
It's Sources. it will put on 2 degrees of
Preparation and Concentration.
Sensible Properties.
Power of attracting Moisture.
Union with Water: Acidum Vitriolicum Di-
luting from water with ice. by mixing this
of water it produces the Acid Vitriol.
Phenomena attending it's freezing.
Action upon other Salts: Kali Vitriolatum
Most of (P.L.); Natron Vitriolatum (P.L.);
&c. It acts on several Metals
upon Earths: Heavy Spar; Selenite;
Sal Amarus (P.L.); Alum. mixed with
upon Metals: Vitriolum Album, Vi-
tride, Ceruleum (P.L.). Vit. Acid
upon Inflammables: Sulphur; Vitrio-
lic Acid Air, and Glacial Vitriolic Acid;
Ether Vitriolicus (P.L.); Spiritus
Etheris Vitriolici (P.L.); Acid Soaps.
forms a kind of Vitriolic Soap
has a very great power of Elective

in 300 lb burn a quantity of Nitre in
the Oven it will prevent fermentation
from taking place. Its Composition is
principally from Sulphur & the Sulphuric
Elective Attractions. - of pure Nitre -
Theory of its Composition. -
Uses: Dying; Bleaching; Purifying Oils;
Medicine; &c. It is used in Medicine
in various extensive Exhibits in different
forms - Of Acid of Nitre. best is Nitric
It's Sources. -
Usual Mode of obtaining it.
Method of purifying.
It's sensible Properties.
Action upon Gases.
Union with Water: Aqua Fortis; Acidum
Nitrosam Dilutum (P.L.).
Action upon Saline Bodies: Aqua Regia: Nitromuriatic
Prismatic, and Rhombic Nitre; &c.
- upon Earths: Nitrous Barytes;
Calcareous Nitre; &c.
- upon Metals: Argentum Nitratum
(P.L.); Nitrated Copper; &c.
- upon Inflammables: Nitrous Gas; Nitrous
Phlogisticated Nitrous Acid; Spontaneous Combustion.
Change is quite remarkable, if quite pure it is
Elective Attractions. -
Theory of its Composition. -
Uses: Dying; Etching; Assaying; Medi-
Both these - Some very beautiful. Since
Salt is prepared from these, &c. &c.
They combine with Metals & Salts, they are

Of Acid of Common Salt.

It's Sources.

Manner of obtaining the Pure Acid.

It's sensible Properties.

Combination with Gasses : *Dephlogisticated Marine Acid Air.*

Union with Water : *Common Marine Acid.*

Action upon other Salts : *Digestive Salt ; Common Salt ; Sal Ammoniacus (P.L.) ; &c.*

—— upon Earths : *Muriated Barytes ; Muriated Lime ; Muriated Magnesia ; &c.*

—— upon Metallic Substances : *Hydrargyrus Muriatus ; Hydrargyrus Muria- tus Mitis (P.L.) ; Luna Cornea ; &c.*

Theory of it's Composition.

Uses : *Bleaching ; Dying ; Assaying ; Medicine ; &c.*

Of Acid of Arsenic ; of Borax ; of Fluor ; of Molybdæna ; of Amber ; and of Tungsten.

Their Sources.

Preparation.

Pro-

Properties.
 Combinations.
 Attractions.
 Constitutions.
 Uses.

Of Aërial Acid.

It is obtained in many ways, as by the following
 Its Sources. *It is obtained in many ways, as by the following*
 Methods of collecting it. *It is obtained in many ways, as by the following*
 Its sensible Properties. *It is obtained in many ways, as by the following*
 Union with other Gases. *It is obtained in many ways, as by the following*
 with Water: Acidulated Springs. *It is obtained in many ways, as by the following*
 with Saline Bodies: Mild Alkalies. *It is obtained in many ways, as by the following*
 with Earths: Aerated Earths. *It is obtained in many ways, as by the following*
 with Metallic Substances: Chalybeate Springs. *It is obtained in many ways, as by the following*
 with Inflammable Substances. *It is obtained in many ways, as by the following*
 Elective Attractions. *It is obtained in many ways, as by the following*
 Theory of its Composition. *It is obtained in many ways, as by the following*
 Use in Medicine. *It is obtained in many ways, as by the following*
 Vegetable Acids. *It is obtained in many ways, as by the following*
 OF VEGETABLE ACIDS.
 Their distinguishing Properties.
 Enumeration of Acid of Vinegar, of Tartar, &c.
 may be made Artificially, but there is great danger in making it unless taken in the proper manner for this purpose, in their manner

...a quantity of this Acetial Acid
before when there is this liquor fermenting it is
known. The potency of Acetial Substances depends
...by Acetial (held). This Acetial Acid
...with Sulphur is a good medium
of Sugar, of Sorrel, of Lemons, of Wood,
...of Benzoin, and of Galls.

Acetial Acids are very easily decomposed
...in point of strength

Of Acid of Vinegar.
The best white wine Acet is produced in

It's Sources. *this is the best & strongest of*

Purification. *being quite colorless. but best*

Concentration by Freezing, by Composi-

-tion, and Decomposition: *Acidum Aceto-*

sum (P.L.).

Sensible Properties. *Acet. To purify it it*

Action upon other Salts: *Kali Acetatum done by*

(P.L.); Aqua Ammoniae Acetatae (P.L.)

upon Earths: *Acetated Barytes. that which*

upon Metals: *Erugo; Cerussa Ace-*

data (P.L.).

upon Inflammables. *it is the fire which*

Elective Attractions. *all things*

Theory of it's Composition. *Unions the more*

Uses; Dying; Printing; Preserving; Medi- *of bottles*

vine; &c.

...with Vinegar

will keep a great length of time, & better

...will burn without, &

...the bottom of Acet in these Articles

and used much in Medicines *Of*

*Of Acid of Tartar; of Sugar; of
Sorrel; of Lemons; of Wood; of
Benzoin; and of Galls.*

Their Sources.

Preparation.

Purification.

Properties.

Combinations.

Attractions.

Constitutions.

Uses.

OF *Animal* ACIDS.

Their distinguishing Properties.

Enumeration; *Acid of Phosphorus, of
Prussian Blue, of Ants, of Fat, of Milk,
and of Sugar of Milk.*

*Example. Of Acid of Phosphorus. upon a white
acid there is a quantity of pure phosphorus
It's Sources. in what is left behind in Vitrific Acid
Present Modes of preparing it. Nitrous Acid
It's sensible Properties. is heat applied to
Effects of Heat on it: Glacial Acid. of Phosphorus
produces a kind of Glass. Comb. of
Phosphorus Combined with Earth
will produce Bone; Bone;*

particular acid with Cal. of Iron
 be a quart of C. Curia's arg. with Veg
 et. Alkali and burn them in an Iron
 pot afterwards (29) the liquor being
 it some blue combination
 the other forms of the same they
 produce a brown precipitation
 with Earths: Cornu Cervi
 which is the Prussian Blue it is
 you boil them in water (How
 with Metals: Siderite; Green
 Decomposed is of an orange colour
 with Lead Ore; &c. phosphorus
 and from upon a little vinegar form
 adding some Ac. Decal to the mixture
 will produce a beautiful Coloured Liquid
 Theory of it's Composition.
 Uses. Prussian Blue is made of three
 combined with Pot. alkali
 of it is produced by the Ant. in
 of Fat; of Milk; and of Sugar
 Acid of Milk. Fat is produced by
 stilling it, this is a very offensive to
 Their Sources. This acid is volatile & if
 is submitted to the fire
 Preparation.
 Purification.
 Properties. This is only way - acid of
 Combinations. This is quite different than
 Attraction. from the Sweet Smell
 Constitutions.
 Uses.

in greater quantity by fire than by
there are 3 species of Alkali found in
Vegetable & Potable. One is of Vegetables
contains a quantity of Vegetable Alkali.
Vegetable Alkali is produced from the
different Vegetables by burning them in
Ash. These Alkalies contain a quantity
of Nitric Acid which is got rid of by
Their distinguishing Properties.
Theory of Alkalescence.
Division of Alkalies into Vegetable, Mineral,
Animal. If it is an Acid, then we obtain
the Alkali. If it is a base, then we obtain
All these Alkalies are in a degree
Caustic. Of Vegetable Alkali. Alkali is
freely with all acids and produces
many preparations as is then enumerated.
It's Sources. All white Salt is combined
Preparation and Purification.
Sensible Properties. They are white, heavy, and
Effects of Exposure on it: Oleum Tartari per
Alkali Deliquium. Boiled with Sulphur produces
It's Solution in Water: Aqua Kali Puri
(P.L.).
Effects of Heat on it: Causticum commune
Acerrimum (P.E.).
It's Combination with Acids: Kali Vitrio-
latum (P.L.); Common
Nitre; Kali Acetatum
(P.L.); Crystalli Tartari
(P.L.); Kali Tartarisa-
tum (P.L.); Prussian
Acid. 31 days.

Alkali; Kali Preparatum
(P.L.).

It's Combination with Earths: *Glass; Li-*
quor Silicum.

————— with Metallic Substances.

————— with Inflammables: *Phos-*
phoric Gas; Kali Sulphu-
ratum (P.L.); *Fluxes;*
Soaps.

Elective Attractions.

Uses: *Dying; Scowering; Bleaching; Agri-*
culture; Glass-making; Metallurgy; Me-
dicine; &c.

is obtained Of Mineral Alkali. in the same
anner as the vegetable, by burning a
ed called Soda (Natron P.L.) which produces
the Soda of the Phos. these properties
It's Sources. *Anal. agrees to each other*

Preparation and Purification. *It may be used*

Sensible Properties. *freedom they the*

Effects of Exposure on it: Efflorescence. *The Soda boiler*

of Heat: Watery Fusion. *in large quantities*

It's Union with Acids: *Natron Vitriolatum*
(P.L.); *Rhombic Nitre; Com-*
mon Salt; Borax; Natron Tarta-
rifatum

risatum (P.L.); *Soda Phosphorata*; *Natron Preparatum* (P.L.).

It's Union with Earths : *Glass*.

———— with Metallic Substances.

———— with Inflammables : *Hepar Sulphuris*; *Common Soap*; *Fluxes*; &c.

Elective Attractions.

Uses : *Bleaching*; *Dying*; *Glass-making*; *Medicine*; &c.

Of Animal or Volatile Alkali.

Is produced by the decomposition of some animal body, especially the horny parts of the horn.

It's Sources.

Preparation : *Alkaline Gas*.

Sensible Properties.

Union with Water : *Aqua Ammoniac Puræ* (P.L.). -

with Acids : *Virgolic*, *Nitrous*, and

Common Ammoniac; *Aqua Ammoniac*

Acetata, (P.L.); *Ammonia Prepara-*

rata (P.L.).

———— with Earths.

———— with Metals : *Cuprum Ammoniacum* (P.E.).

of Alkali seems to be a Composition
 of Gas and inflammable, Acid
 (24)

Union with Inflammables: Spiritus Ammoniac (P.L.); Spiritus Ammoniac compositus (P.L.); Spiritus Ammoniac feetidus (P.L.), Succinatus, Salis Ammoniaci (P.E.); Linimentum Ammoniac (P.L.).

Elective Attractions.

Theory of it's Composition.

Uses in the Arts and Medicine.

~~OF COMPOUND SALTS.~~

Nature of their Composition.

Division into Simply-Compounded, and Super-Compounded.

OF SIMPLY-COMPOUNDED SALTS.

Their Composition.

Selection.

Selection. *is difficult to dissolve. It requires 10 parts of water to dissolve 1 part.*
is the quantity of
decomposed
veins of the earth
the salt
great degree
to Sulphur
tri 3
with
de of Alkali.
Should be used to a very subtle powder
existing with it a quantity of hy. let it
be kept in a dry place

Basis	{	*Vitriolated Tartar, <i>difficult</i>
Vegetable		*Common Nitre, <i>used in cooling</i>
Alkali.	{	Cream of Tartar, <i>Indies. Mixt</i>
		Soluble Tartar, <i>It is used in</i>
	{	Diuretic Salt. of Gold.
		Glauber's Salt, <i>Compound of</i>
Basis	{	Common Salt, <i>2</i>
Mineral		Phosphorated Soda, <i>Gunpowder is</i>
Alkali.	{	Sulphur, <i>6</i>
		Boerhaave's Salt, <i>6</i>

Should be used to a very subtle powder
existing with it a quantity of hy. let it
be kept in a dry place

out type. There is a Saline powder discovered
 which, when Gunpowder more strongly than
 out Nitre will (25) this Saline sub-
 sulphur deflagrates very powerfully Nitrogen
 in making } Vitriolic Ammoniac, and several other
 separately } and in medicine, acting as a
 Anti-inflammatory medicine.
 Alkali. } Common Ammoniac.
 Common Salt is composed of Mineral
 Alkali & Of Vitriolated Tartar. *Crystall. Ac.*
 (Kali Vitriolatum P.L.).

It's Preparations.

Properties.

Uses.

Of Nitre.

(Kali Nitratum P.L.).

• It's Natural History.

Purification.

Sensible Properties.

Effects of Heat on it: *Vegetable Alkali*;
Pure Air.

Solubility in Water.

Decomposition by Acids: *Acid of Nitre.*

It's Deflagration with Metallic Substances:
Calces Antimonii (P.L.).

Combination with Inflammables: *Pulvis*
Fulminans; *Gunpowder.*

Uses: *Mining*; *Gunnery*; *Glass making*;
Medicine; &c.

E

Of

*Of Cream of Tartar; Soluble Tar-
tar; and Diuretic Salt.*

*(Crystalli Tartari; Kali Tartarizatum;
Kali Acetatum P.L.)*

Their Sources.

Preparation.

Properties.

Combinations.

Decomposition.

Uses.

Of Glauber's Salts.

(Natron Vitriolatum P.L.)

It's Preparation.

Properties.

Uses.

*is composed of Common Salt. of Mineral
Salt with* *(Natron Muriatum P.L.)* *Muriatic*

It's Natural History.

Preparation.

Purification : *Dundonald's Method.*

Properties.

Decom-

Decomposition : *Marine Acid ; Patent Yellow.*

Uses : *Diet ; Agriculture ; Glazing ; Metallurgy ; Medicine ; &c.*

Of Phosphorated Soda.

(Natron Phosphoratum.)

It's Preparation.

Properties.

Uses.

*This is imported Of Borax. from the East
Indies in (Natron Boracicum P.L.) an impure
state. it is purified by solution & crystallization.
It's Natural History. Used as a glass
Purification.
Properties.*

Uses in the *Arts and Medicine.*

*Of the Vitriolic, Nitrous, and *Common Ammoniacs.*

*(*Ammonia Muriata P.L.)*

Their Preparation.

Properties.

Decomposition.

Uses.

OF SUPER-COMPOUNDED SALTS.

Their Composition.

Example: Natron Tartarifatum (P.L.).

OF EARTHS.

Their distinguishing Properties: *Weight*;

Insolubility; *Incombustibility*; *Fixity*.

Effects of Saline Substances on them:

Earthy Salts; *Aërated Earths*; *Glass*.

— of Earths on each other: *Porcelain*.

Their union with Metallic Calces: *Enamels*; *Coloured Glass*.

— with Inflammables: *Earthy Hepars*.

Division of Earthy Bodies into *Saline*, and *Insipid*.

OF SALINE EARTHS.

Their distinguishing Properties.

Enumeration: *Barytes*, *Lime*, *Magnesia*.

and Nitric Acid being combined
with both these Acids. Prussian acid
decomposes ²⁹ the Barytes. The
Barytes contains a quantity of metallic
combined with. (Heavy Earth.)
It gives rise by its medicinal
composition by Dr. Crawford in the
Modes of obtaining it. Selenite
Sensible Properties. Medicine requires
Union with Acids: Heavy Spar; Nitrated,
Muriated, Acetated, Aerated Barytes.
Precipitation by Prussian Alkali. Small doses
Effects upon Compound Salts. 34 x going
upon Sulphur: Barytic Hepar.
Elective Attractions. Barytes if given
Opinions concerning it's Nature.
Uses. Barytes will produce death
if used in a moderate to large
quantity instead of this use
Of Lime. Barytes is
(Calcareous Earth.) deprived of
acid. Lime is composed
of Calcareous earth combined with
water. In preparation of
Sensible Properties. when it is added to the
Effects of Exposure on it: Slaked Lime.
Union with Water: Aqua Calcis.
with Acids: Selenite; Calcareous
Fluor; Chalk; Marble; &c.
Effects

Effects upon Alkalies: Calx cum Kali Puro
(P.L.); Soap Lees.

— upon Compound Salts.

— upon other Earths.

— upon Metallic Substances: Cemen-
tation of Iron.

— upon Inflammables: Calcareous He-
par; Calcareous Soap.

Elective Attractions.

Uses: Utensils; Cements; Modelling; Dying;
Bleaching; Tanning; Sugar-baking; Me-
tallurgy; Medicine; &c.

a Saline Earth Is a decomposition
of *Epsom Salt* Of Magnesia. It is found
in *Sea water* (Muriatic Earth.) Many Stones
found in *Natural History*, to contain Magnesia
in *Preparation*. of these Stones are found in
Sensible Properties. of *Epsom Salt*
Effects of Heat upon it: *Magnesia Usta*
(*tasty*) of *alkaline* Solution, and
its Combination with Acids: *Magnesia Vi-*
riolata (P.L.); *Magnesia Alba* (P.V.)
Effects of Compound Salts on it. *Magnesia*
Its Union with other Earths: *Soap Rock*;
Asbestos; &c. *Combines freely with*
Acids. It is used in its *Union*
Attraction, - Uses. It is used in -

By the use of in heights in the
vine &c. The but having no heria
id, does not produce Excretion
the Magnesia³¹ All does when it gets
Union with Sulphur: Muriatic Hepar.
Elective Attractions. Contact with in air
Uses. Magnes All is more proper than
Magnes All. Fire does not deprive
of it. OF INSIPID EARTHS. quality.
Magnesia is used in making poth
Their distinguishing Properties.
Enumeration; Clay, Flint.
Earth Contains a quantity of metallic
substance Especially the base of Iron
(Argillaceous Earth.) a quantity of
a. Fuller's Earth Contains a quantity
It's Natural History.
Preparation. Argillaceous Earth. Alum is
composed of Earth & Vitriolic Acid. Earth
Sensible Properties. goes many changes by
Effects of Heat on it: Wedgwood's Ther-
mometer freely with all Acids. Alum
Mixture with Water. the most powerful
Union with Acids: Alum.
with Alkalies, and Earths: Reau-
mur's Porcelain. Earth which forms
Elective Attractions. which is very strong, and
Uses: Pottery; Pigments; Dying; Scower-
ing; Bleaching; Tanning; Refining Li-
quors; Medicine; &c.

Of Flint.

(Silicious Earth.)

It's Natural History.

Sensible Properties.

Effects of Heat on it.

of Acids : Silicious Fluor. Acid.

of Alkalies : Glass; Liquor Silicum.

of Compound Salts.

of other Earths.

of Metallic Calces : Coloured Glass ;

Stained Crystal.

Elective Attractions.

Uses : Building ; Glass ; Pastes ; Enamels ;

Paints ; Polishing ; &c.

OF METALS.

Their Natural History.

Manner of working their Ores.

Assaying of Ores.

Distinguishing Properties : Weight ; Splen-

dour ; Opacity ; Malleability ; Ductility ;

Power of conducting Electricity.

Effects

Substances quite different from the matter
the burning of purifying them matter
to let them dry 33 a state of heat
many bodies as Lead undergoes a

Effects of Exposure on them: Tarnish; Rust.
Effects of Heat: Annealing; Cementation;
Fusion; Granulation; Combustion;
Calcination; Scorification; Vitriification.
Effects of Acids: Solution; Corrosion. Bodies are
of Alkalies.
Effects of Compound Salts: Volatilisation.
Effects of Earths. which take the
name of fluxes
Effects of Metals on each other: Amalga-
mation; Alloy.

Separation of Metallic Compounds by So-
lution; Fusion; Sublimation; Calcination.

Effects of Sulphur on Metals: Artificial
Ores.
Effects of Oils.

Division of Metallic Bodies into Metals,
and Semimetals.

OF METALS.

Their Distinguishing Properties.
Division into Perfect, and Imperfect.

OF PERFECT METALS.

Their Distinguishing Properties.
Enumeration; Platina, Gold, Silver, Quick-
silver.

the Gold & Iron. It is very difficult
to be fused. *Aq. Regia* is the menstruum
of Platina. (34) It is the most
valuable article which is contained
in it slightly. Of Platina. Ductile & malleable
It's Natural History. fusible by mixing
Purification. Arsenic All. It combines
Sensible Properties. fused with Copper
Power of resisting Heat.
Solubility in Aqua Regia.
Properties of the Solution.
Solubility in Liver of Sulphur.
Combinations with other Metals.
Elective Attractions.
Uses: Chemical Vessels.
There is no metallic substance so common
to be found. Of Gold. In almost all
mineral beds there is some particles -
It's Natural History. found in different
Separation from it's Ores. Sometimes in its
Refinement: Cupellation; Quercitation; Part-
found to be of different
Sensible Properties. Some being found
Effects of Heat on it. It is found combined
Solubility in Aqua Regia. Antimony & Arsenic
Effects of Alkalies upon the Solution: Au-
riferous Fulminans, of Gold. Silver is
soluble in Aethers. in Aethers.
very of Essential Oils. ductile & malleable
more than any other Effects
character. M. Bevington

Beats out so as to form several miles
of length & breadth. In burning fulminant
will produce a (35) violent combustion
which is very dangerous. Gold is the
most malleable of all metals.

Effects of Metals.

----- of Metallic Solutions: *Purple Powder of Cassius.*

Combination of Gold with other Metals:
Standard Gold.

Action of *Hepar Sulphuris* upon Gold.

Manner of heightening the Colour of Gold.

Elective Attractions.

Uses: *Utenfils; Ornaments; Enamelling;
Gilding; Dying; Soldering; &c.*

Of Silver.

It's Natural History.

Separation from it's Ores.

Refinement.

Sensible Properties.

Effects of Heat on it.

----- of Acids: *Staining Liquor; Argentum Nitratum (P.L.).*

Decomposition of it's Solutions.

----- by Acids: *Luna Cornea.*

----- by Alkalies, and Earths:
Argentum Fulminans.

----- by Metals: *Arbor Dianæ.*

Effects of Alkalies upon Silver.

Effects of other Metals : *Standard Silver*,

----- of Inflammables,

Elective Attractions,

Uses : *Plate ; Ornaments ; Silvering ; Bell Metal ; Enamelling ; Soldering ; Dying ; Medicine ; &c.*

Of Quicksilver.

It's Natural History.

Extraction from it's Ores.

Purification.

Sensible Properties : *Fluidity.*

Effects of Exposure on it : *Consolidation.*

----- of Triture : *Pilulæ ex Hydrargyro* (P.L.) ; *Hydrargyrus cum Cretâ* (P.L.) ; *Syrupus Hydrargyri* (P.S.).

----- of Heat : *Volatilisation ; Calcination ; Hydrargyrus Calcinatus* (P.L.).

----- of Acids : *Hydrargyrus Vitriolatus* (P.L.) ; *Hydrargyrus Nitratus Ruber* (P.L.) ; *Hydrargyrus Muriatus* (P.L.) ; *Hydrargyrus Muriatus Mitis* (P.L.) ; *Calomelas* (P.L.) ; *Hydrargyrus Acetatus* (P.L.).

Pre-

Precipitates by Alkalies: *Calx Hydrargyri Alba* (P.L.); *Mercurius Cinereus* (P.E.).

———— by Earths.

———— by Metals.

Effects of Compound Salts on Quicksilver.

———— of Sulphur: *Hydrargyrus cum Sulphure* (P.L.); *Hydargyrus Sulphuratus Ruber* (P.L.).

———— of Unctuous Substances: *Ointments*; *Plaisters*.

Union with other Metallic Substances: *Amalgams*.

Elective Attractions.

Uses: *Philosophical Instruments*; *Gilding*; *Refining*; *Assaying*; *Mirrors*; *Anatomy*; *Medicine*; &c.

OF IMPERFECT METALS.

Their distinguishing Properties.

Enumeration; *Lead*, *Copper*, *Iron*, *Tin*.

Of Lead.

It's Natural History.

Method of extracting from it's Ores.

It's sensible Properties.

Effects of Exposure on it.

———— of Heat : *Plumbum Ustum* ; *Massicot* ;
Minium ; *Litharge*.

———— of Acids : *Vitriolated*, *Nitrated*,
Muriated Lead ; *Patent Yellow* ; *Cerussa* ; *Cerussa Acetata* (P.L.) ; *Aqua Lithargyri Acetati* (P.L.).

Combination with Earths : *Glass*.

———— with Oils : *Unguents* ; *Plasters* ;
Paints ; *Varnishes*.

———— with other Metallic Substances : *Pewter* ; *Solder* ; &c.

Manner of detecting the Presence of Lead.

Elective Attractions.

Uses : *Building* ; *Utenfils* ; *Shot* ; *Statues* ;
Glass-making ; *Glazing* ; *Painting* ; *Varnishing* ; *Refining* ; *Affaying* ; *Medicine* ; &c.

Of Copper.

It's Natural History.

Extraction from it's Ores.

Sensible Properties.

Effects of Exposure on it.

----- of Heat.

It's Solution in Acids : *Cuprum Vitriolatum*
(P.L.) ; *Nitrated, and Arsenicated Cop-*
per ; *Ærugo* (P.L.).

Precipitates by Alkalies.

----- by Earths : *Verditer.*

----- by other Metallic Substances :
Ziment Copper.

Effects of Alkalies upon Copper : *Cuprum*
Ammoniacum (P.E.).

----- of Compound Salts : *Aqua Sapphi-*
rina (P.E.).

----- of Sulphur : *Æs Ustum.*

----- of Oils.

Union with other Metallic Substances : *Bell*
Metal ; *Bronze* ; *Prince's Metal* ; *Pinch-*
beck ; *Brass* ; *White Copper* ; *Pewter* ; &c.

Elective Attractions.

Uses:

Uses : *Navigation ; Gunnery ; Buildings ;
Utenfils ; Alloys ; Gold, and Silver Lace ;
Enamelling ; Dying ; Painting ; Medicine ;
&c.*

Of Iron.

It's Natural History.

Manner of working it's Ores.

It's different States : *Crude Iron ; Bar Iron ;
Steel.*

Sensible Properties.

Magnetic Quality.

Effects of Exposure on it : *Ferri Rubigo
(P.L.).*

Means of defending it from rusting.

Effects of Heat : *Variation of Colour ; Tem-
pering Steel.*

----- of Acids : *Ferrum Vitriolatum
(P.L.) ; Colcothar ; Ferrum Muriatum
(P.L.) ; Prussian Blue ; Dyer's Ink ;
Common Ink ; Vinum Ferri (P.L.).*

----- of Compound Salts : *Ferrum Tarta-
risatum (P.L.) ; Ferrum Ammoniacale
(P.L.).*

----- of Sulphur : *Spontaneous Inflammation.*

Combination with Metallic Substances.

Elective Attractions.

Uses :

Uses : *Navigation ; Gunnery ; Utenfils ; Painting ; Dying ; Medicine ; &c. &c.*

Of Tin.

It's Natural History.

Extraction from it's Ores.

Sensible Properties.

Effects of Heat upon it : *Stannum Pulveratum* (P.L.) ; *Putty*.

----- of Acids : *Precipitates of Tin ; Scarlet Dyes*.

----- of Compound Salts : *Smoking Liquor of Libavius*.

Union with Sulphur : *Aurum Musivum*.

----- with other Metallic Substances : *Pewter ; Solders ; &c.*

Elective Attractions.

Uses : *Utenfils ; Mirrors ; Types ; Tinning ; Enamels ; Medicine ; &c.*

OF SEMI-METALS.

Their distinguishing Properties.

Division into *Fixed*, and *Volatile*.

OF FIXED SEMI-METALS.

Their distinguishing Properties.

Enumeration ; *Bismuth, Nickel, Cobalt, Antimony, Manganese.*

Of Bismuth.

It's Natural History.

Extraction from it's Ores.

Sensible Properties.

Effects of Heat : *Flowers of Bismuth ; Vitri-
fied Calx.*

Solution in Acids : *Sympathetic Ink.*

Precipitates : *Magistery of Bismuth.*

Union with Sulphur.

———— other Metallic Substances : *Sir
I. Newton's Fusible Metal ; Adul-
teration of Quicksilver.*

Elective Attractions.

Uses : *Pewter ; Solder ; Types ; Mirrors ;
Assaying ; Painting ; Imitation of Silvering,
and Gilding ; &c.*

Of Nickel.

It's Natural History.

Separation from it's Ore.

Difficult Purification.

Sensible Properties.

It's Magnetism accounted for.

Effects of Heat upon it.

Properties of it's Solution.

It's Affinity to Sulphur.

Combination with other Metallic Substances.

Elective Attractions.

Uses.

Of Cobalt.

It's Natural History.

Reduction from it's Ores.

Sensible Properties.

Effects of Heat upon it.

Solution in Acids : *Sympathetic Ink.*

Combination with Earths : *Zaffre ; Smalt ;
Powder Blue.*

————— with other Metallic Substances.

Elective Attractions.

Uses: *Colouring Glass; Glazing; Enamelling; Painting; Washing; &c.*

Of Antimony.

It's Natural History.

Different Methods of obtaining the Regulus.

It's sensible Properties.

Effects of Heat upon it: *Argentine Flowers; Antimonium Vitrificatum (P.L.); Vitrum Antimonii Ceratum (P.E.).*

— of Acids: *Antimonium Muriatum (P.L.); Powder of Algaroth; Antimonium Tartarifatum (P.L.); Vinum Antimonii (P.L.).*

Deflagration with Nitre.

Combination with other Metallic Substances.

Union with Sulphur: *Crude Antimony.*

Effects of Heat upon Crude Antimony: *Pulvis Antimonialis (P.L.).*

Action of Alkalies upon it: *Kermes Mineralis (P.S.); Sulphur Antimonii Precipitatum (P.L.).*

Defla-

Deflagration with Nitre : *Antimonium Calcinatum* (P.L.) ; *Nitrum Antimoniatum* (P.S.) ; *Crocus Antimonii* (P.L.) ; *Calx Antimonii Nitrata* (P.E.).

Combination of Crude Antimony with Metallic Substances : *Æthiops Antimonialis* (P.S.).

Elective Attractions.

Uses . *Types* ; *Medicine* ; &c.

Of Manganese.

It's Natural History.

Manner of obtaining the Regulus.

It's sensible Properties.

Effects of Exposure : *Black Calx*.

Action of this upon Acids : *Dephlogisticated Marine Acid*.

— upon Oils : *Spontaneous Inflammation*.

Elective Attractions.

Uses : *Glass-making* ; *Glazing* ; &c.

OF VOLATILE SEMI-METALS.

Their general Properties.

Enumeration ; *Arsenic*, *Zinc*.

Of *Arsenic*.

It's Natural History.

Sublimation of the Regulus.

Difference between this and *White Arsenic*.

Effects of Heat upon the latter : *Garlick Smell*.

It's Solubility in Water.

Effects of Acids upon it : *Acid of Arsenic*.

Combination with Alkalies and Earths : *Hepar Arsenici* ; *Macquer's Arsenical Salt*.

————— with Sulphur : *Realgar* ; *Orpiment*.

————— with Oils.

————— with Metallic Substances :
White Copper ; *Scheele's Pigment*.

Methods of detecting the Presence of *Arsenic*.

Elective Attractions.

Uses : *Gilding* ; *Imitating Silver* ; *Mirrors* ;
Enamelling ; *Glass-making* ; *Glazing* ; *Soldering* ; *Dying* ; *Painting* ; *Medicine* ; &c.

Of Zinc.

It's Natural History.

Distillation from it's Ores.

Sensible Properties.

Effects of Heat upon it : *Zincum Calcinatum*
(P.L.).

Union with Acids : *Zincum Vitriolatum*
(P.L.).

——- with other Metallic Substances : *Spelter* ; *Pewter* ; *Tutenag* ; *Brass* ; *Pinchbeck* ; *Solders* ; *Prince's Metal* ; *Bronze*.

Elective Attractions.

Uses : *Utenfils* ; *Gunnery* ; *Statuary* ; *Amalgams* ; *Painting* ; *Medicine* ; &c.

A P P E N D I X.

TUNGSTEN.

WOLFRAM.

MOLYBDÆNA.

OF INFLAMMABLES.

Their various Sources, and Forms.

Distinguishing Properties: *Combustibility,*
and Levity.

Effects of Exposure on them.

—— of Water.

Combination with Gasses, Saline Substances, &c.

Division into *Mineral, Vegetable, and Animal.*

OF *Mineral* INFLAMMABLES.

Their distinguishing Properties.

Enumeration; *Inflammable, and Hepatic*
Airs, Naptha, Petroleum, Asphaltum, Jet,
Coal, Peat, Amber, Sulphur, Plumbago,
and the Diamond.

Of Inflammable and Hepatic Airs.

N. B. These treated of under Gasses.

Of

*Of Naptha; Petroleum; Asphaltum;
Jet; Coal; and Peat.*

Their Natural History.

Theory of their Origin.

Sensible Properties.

Phenomena attending their Combustion.

Effects of Heat upon them in close Vessels:

Dundonald's Tar; British Oil.

Insolubility in Water, and Spirit of Wine.

Solubility in Oils.

Union with Sulphur: *Balsamum Sulphuris*

Barbadense.

Uses.

Of Amber.

Natural History.

Clarification.

Sensible Properties.

Effects of Heat in close Vessels: *Sal, &*

Oleum Succini (P.L.).

Difficult Solubility of Amber.

Uses.

Of Sulphur.

It's Natural History.

Manner of obtaining it: *Flores Sulphuris*
(P.L.); *Sulphur Vivum*.

Sensible Properties.

Effects of Heat upon it: *Phlogisticated Vi-*
triolic Acid.

Insolubility in Water.

Union with Inflammable Air: *Hepatic Gas*.

—— with Alkalies: *Alkaline Hepars*.

Deflagration with Nitre: *Vitriolic Acid*.

Combination with Nitre and Charcoal:
Gunpowder.

—— with Nitre and Vegetable Al-
kali: *Pulvis Fulminans*.

—— with Earthy Substances:
Earthy Hepars.

—— with Metallic Substances:
Hydrargyrus cum Sulphure
(P.L.); *Hydrargyrus Sulphu-*
ratus Ruber (P.L.); *Orpiment*;
Aurum Musivum; &c.

—— with Oils, and Bitumens:
Balsams of Sulphur.

Elective

Elective Attractions.

Theory of it's Composition.

Uses : *Impressions ; Bleaching ; Checking Fermentation ; Manufacturing Vitriolic Acid ; Gunpowder ; Medicine ; &c.*

Of Plumbago.

Natural History.

Sensible Properties.

Effects of Heat.

----- of Alkalies : *Inflammable Air.*

Decomposition by Neutral Salts.

Union with Metals : *Cold-short Iron.*

Theory of it's Composition.

Uses : *Pencils ; Shot-polishing ; Razor Strops ; Crucibles ; Furnaces ; &c.*

Of the Diamond.

Natural History.

Sensible Properties ; *Refractive Power.*

Effects of Heat.

----- of Charcoal.

Opinions regarding it's Nature.

Uses.

OF *Vegetable* INFLAMMABLES.

Their distinguishing Properties.

Enumeration; *Spirit of Wine, Essential Oils, and Resins, 'Expressed Oils, Camphor, Charcoal.*

Of Spirit of Wine.

Preparation, and Purification: *Alkohol* (P.L.).

Sensible Properties.

Effects of Combustion.

Union with Water: *Spiritus Vinosus Rectificatus* (P.L.); *Spiritus Vinosus Tenuior* (P.L.).

—— with Acids: *Dulcified Spirits; Æthers; Oleum Vini* (P.L.).

—— with Alkalies: *Spiritus Ammoniac* (P.L.).

—— with Compound Salts.

—— with Sulphur.

—— with Essential Oils: *Spiritus Carui* (P.L.); *Spiritus Cinnamomi* (P.L.); &c.

Union

Union with Resins : *Tinctures* ; *Varnishes*.

—— with Camphor : *Spiritus Camphoratus* (P.L.).

Elective Attractions.

Theory of it's Composition.

Uses.

Of Essential Oils, and Resins.

Their Preparation.

Sensible Properties : *Spiritus Rectior*.

Effects of Exposure.

—— of Heat : *Oleum Terebinthinæ Rect.* (P.L.) ; *Resina Flava* (P.L.).

Union with Water : *Aqua Cinnamomi* (P.L.) ; *Aqua Fœniculi* (P.L.) ; &c.

—— with Acids : *Acid Soaps* ; *Spontaneous Inflammation*.

—— with Alkalies : *Starkey's Soap* ; *Spiritus Ammoniac Comp.* (P.L.).

—— with Spirit of Wine : *Spiritus Cinnamomi* (P.L.) ; *Spiritus Lavendulæ* (P.L.) ; *Tinctures* ; *Varnishes*.

—— with Sulphur : *Balsams of Sulphur*.

Combinations of Resins with Expressed Oils : *Unguent*s ; *Plaisters*.

Sophi-

Sophistication of Essential Oils.

Effects of Essential Oils upon Phosphorus :

Liquid Phosphorus.

Nature of the Composition of Essential Oils, and Resins.

Uses : *Fuel ; Painting ; Varnishing ; Perfuming ; Soap-making ; Medicine ; &c.*

Of Expressed Oils.

Their Preparation.

Sensible Properties.

Effects of Exposure on them : *Rancidity.*

----- of Heat : *Empyreumatic Oil.*

----- of Acids : *Acid Soaps.*

----- of Alkalies : *Common Soap.*

----- of Earths : *Calcareous Soap.*

Combination with Metallic Substances :

Paints ; Plaisters ; Unguents.

----- with Sulphur : *Balsamum Sulphuris.*

----- with Phosphorus : *Liquid Phosphorus.*

Nature of their Composition.

Uses :

Uses : *Diet ; Lamps ; Painting ; Varnishing ;
Soap-making ; Mechanics ; Medicine ; &c.*

Of Camphor.

Natural History.

Refinement.

Sensible Properties.

Effects of Exposure.

----- of Heat : *Acid of Camphor.*

----- of Acids : *Oil of Camphor.*

Solution in Water : *Mistura Camphorata*
(P.L.).

----- in Spirit of Wine : *Spiritus Cam-*
phoratus (P.L.).

----- in Oils : *Oleum Camphoratum*
(P.E.)

Nature of Camphor.

Use in Medicine.

Of Charcoal.

It's Preparation.

Sensible Properties.

Durability of Charcoal.

Effects of Heat on it.

Effects

Effects of Charcoal on Gasses.

----- of Acids on Charcoal : *Sulphur ;
Inflammation.*

Union with Alkalies : *Phlogisticated Alkali ;
Fluxes.*

Effects upon Compound Salts : *Hepar Sul-
phuris.*

----- upon Metallic Substances : *Reduc-
tion ; Cementation.*

Mixture with Nitre and Sulphur : *Gun-
powder.*

Effects upon Liver of Sulphur.

----- upon Expressed Oils.

Theory of it's Composition.

Uses.

OF *Animal* INFLAMMABLES.

Their distinguishing Properties.

Enumeration ; *Phosphoric Gas, Wax, Sper-
ma Ceti, Fat, Butter, Ambergrease, Phos-
phorus.*

Of Phosphoric Gas.

N. B. This treated under Gasses.

Of

Of Wax; Sperma Ceti; Fat; and Butter.

Their Origin.

Sensible Properties.

Effects of Exposure : *Cera Alba* ; *Rancidity*.

----- of Heat : *Butter of Wax* ; *Acid of Fat*.

----- of Acids : *Acid Soaps*.

----- of Alkalies : *Common Soap*.

----- of Earths : *Calcareous Soap*.

----- of these on Metallic Substances.

----- on other Inflammables.

----- on each other.

Theory of their Composition.

Uses : *Diet* ; *Fuel* ; *Soap-making* ; *Curriery* ;
Varnishing ; *Medicine* ; &c.

Of Ambergrease.

It's Origin.

Properties.

Uses.

Of Phosphorus.

It's Preparation.

Sensible Properties.

I

Effects

Effects of Exposure : *Slow Combustion.*

----- of Heat : *Acid of Phosphorus.*

----- of Acids.

----- of Alkalies . *Phosphoric Air.*

----- of Nitrous Salts.

----- of Earths.

----- of Metallic Substances.

----- of Metallic Solutions.

----- of other Inflammable Bodies : *Liquid Phosphorus ; Phosphoric Matches ; Portable Fire.*

Elective Attractions.

Theory of it's Composition.

Uses.

Of ANALYSIS.

Nature of Analysis explained.

Division into *Artificial*, and *Spontaneous*.

Of Artificial Analysis.

Distinction between this, and Spontaneous Analysis.

Manner of proceeding in it ; *Via Sicca ; Via Humida.*

Ana-

Analysis, Via Sicca, illustrated: *Assaying of Ores; Distillation of Vegetable, and Animal Substances.*

Analysis, Via Humida, illustrated: *Analysis of Mineral Waters.*

Of Spontaneous Analysis.

(*Fermentation.*)

Nature of the Bodies disposed to this Analysis.

Circumstances under which it takes place.

It's different Stages: *Vinous; Acetous; Putrid.*

Products of these: *Aërial Acid, Spirit, Vinegar, Volatile Alkali, &c.*

Means of promoting or retarding Fermentation: *Ferments.*

Nature of Ferments.

F I N I S.

